



Indian Health Service Approach to Population Health

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RADM U.S. Public Health Service
Indian Health Service*



Indian Health Service

- Mission: To raise the physical, mental, social, and spiritual health of American Indians and Alaska natives to the highest level
- Goal: To assure that comprehensive, culturally acceptable personal and public health services are available and accessible to American Indian and Alaska Native people.



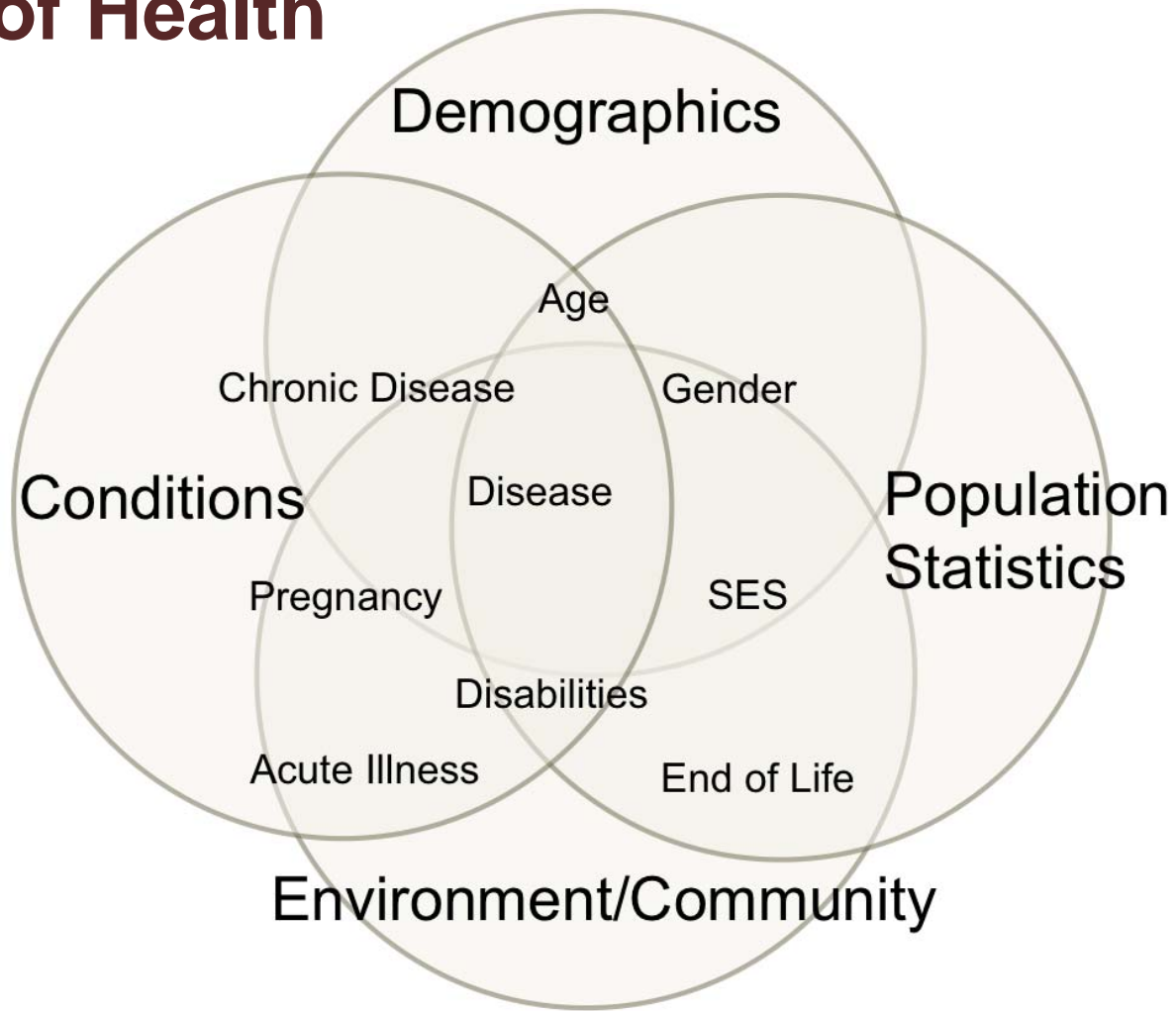
A Quick Look at the IHS

- Provides a comprehensive health service delivery system for approximately 1.9 million American Indians and Alaska Natives.
- Serves members of 562 federally recognized Tribes in primarily remote locations in 36 states.
- FY 2010 spend authority is approximately \$5.0 billion.
- Indian Health Service total staff consists of about 15,700 employees, which includes approximately 2,400 nurses, 800 physicians, 400 engineers, 500 pharmacists, 300 dentists, and 300 sanitarians.



Consider Newer Technologies to Manage a Broad Picture of Health

- Personal Health
- Family History
- Community Health
- Public Health
- Population Health



Resource & Patient Management System

- Developed in the 1970s as a population health tool
 - Cousin to Vista / CPRS at the VHA
- Over 60 software applications
 - Patient, provider, community and population health focus
- Used at most IHS and Tribal health care facilities




www.ihs.gov/CIO/RPMS


Resource & Patient Management System

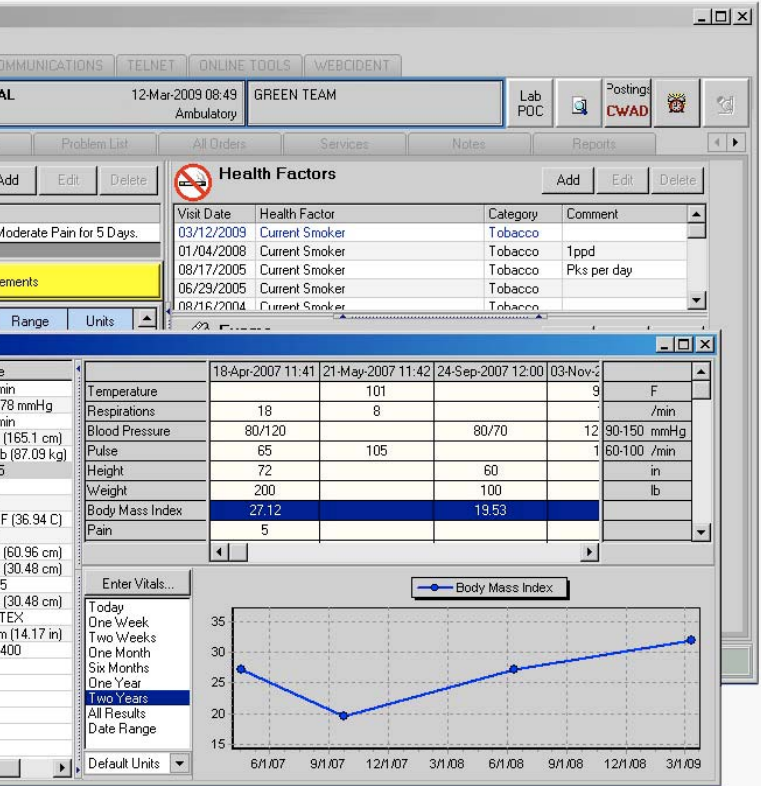
- Client –server application (currently due to band width issues, though work in progress on a web based delivery model)
- Cache dB- upgrade to Ensemble
- Processing for most applications is in Cache at the POC
- Front end programming dependent on usability evaluation and testing (.NET, Java, etc)
- Patient Care Component (PCC) functions as the HDR equivalent
- Programming designed for efficiency and minimal impact on performance at POC
- National Data Warehouse for routine administrative and longitudinal evaluations

Focused on the use of Electronic Health Records



RPMS EHR
Electronic Health Record





The screenshot shows the 'Patient Chart' window for 'Demo Patient' (22-Mar-1947, 61, F). The 'GENERAL' tab is active, showing a visit on 12-Mar-2009 at 08:49 in an 'Ambulatory' setting by the 'GREEN TEAM'. The 'Chief Complaint' section notes 'Patient complains of Fever, Moderate Pain for 5 Days.' The 'Health Factors' table lists 'Current Smoker' with a category of 'Tobacco' and a comment '1ppd'. The 'Vital Signs' table shows values for Temperature (98.5 F), Blood Pressure (122/78 mmHg), Pulse (85 /min), and others. A 'Body Mass Index' graph is displayed at the bottom right, showing a trend from 27.12 in 2007 to 19.53 in 2008.

<http://www.ihs.gov/CIO/EHR/>

Supporting community centric health care delivery

- Software views that allow for integration of community based data within a HIT system
- Community based health measures
 - Community based resources and health status information
 - Early notification of community based risk events
 - Sentinel community based events (e.g. suicide)
 - One event can trigger notification
 - ‘Early epidemic’ notification based on community
 - Pertussis, environmental exposures

Supporting population and public centric health care delivery

- Software views/applications that allow for ‘on the fly’ passive extraction of comparable and defined data for analysis, evaluation, and improved performance – based on defined provider, populations and communities
- Include population and public health measures

Clinical Reporting System



2007 NATIONAL DASHBOARD

2007 National Dashboard (IHS/Tribal)

	2007 Final	2006 Final	2005 Final	2007 Target	Final Results
	11%	11%	11%	N/A	N/A
	79%	79%	78%	N/A	N/A
ol	16%	16%	15%	15%	NOT MET
ol	31%	31%	30%	32%	NOT MET
0	39%	37%	37%	37%	MET
	61%	60%	53%	60%	MET
d	40% ^a	55%	47%	baseline	MET
	49%	49%	50% ^b	49%	MET
			24%	24%	MET
		249,882	246,645		NOT MET
		85,318	95,439		MET
		59%	59%		MET
		69%	76%		MET
		75% ^c	78%		MET
		60%	60%		NOT MET
		41%	41%		MET
		NA	22%		MET
		34% ^e	12%		MET
		11%	28%		MET
		13%	28%		MET
		NA	15%		MET
		43% ^g	baseline		MET
		54%	65%		MET
		64% ^j	24%		MET
es Treatment and Prevention)					Measures Met = 18
port; 78% CRS IZ IMM baseline set in 2006					Measures Not Met = 4
007)					Total Measures = 22

SK

May 03, 2006
Page 1

*** IHS 2006 National GPRA Clinical Performance Measure Report ***

DEMO HOSPITAL

Report Period: Jul 01, 2005 to Jun 30, 2006

Previous Year Period: Jul 01, 2004 to Jun 30, 2005

Baseline Period: Jul 01, 1999 to Jun 30, 2000

CLINICAL PERFORMANCE SUMMARY

Site Site Site GPRA06 Nat'l 2010

Current Previous Baseline Goal 2005 Goal

***** CONFIDENTIAL PATIENT INFORMATION, COVERED BY THE PRIVACY ACT *****

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*** FY06 Clinical Performance Measure Patient List ***

DEMO HOSPITAL

Report Period: Jan 01, 2005 to Dec 31, 2005

Entire Patient List

Cancer Screening: Pap Smear Rates: List of women 21-64 with documented test/refusal, if any. (con't)

UP=User Pop; AC=Active Clinical; AD=Active Diabetic; AAD=Active Adult Diabetic

PREG=Pregnant Female; IMM=Active IMM Pkg Pt

PATIENT NAME HRN COMMUNITY SEX AGE DENOMINATOR NUMERATOR

PATIENT, REYES ANN 000094 CAMERON F 21 UP, AC 02/06/03 88164

PATIENT, LINDA 000121 CAMERON F 21 UP, AC 07/26/04 V76.49

PATIENT, HERLINDA 000248 CAMERON F 21 UP

PATIENT, MILAYIA L 000330 CAMERON F 21 UP, AC 08/29/05 V72.3

PATIENT, SADIE P 000823 CAMERON F 21 UP

PATIENT, MARLENE 000894 CAMERON F 21 UP, AC 03/15/05 ref

PATIENT, RUTH 000504 CAMERON F 21 UP, AC 05/16/05 V76.2

PATIENT, TRINITY 000860 CAMERON F 21 UP, AC

Total # of Patients on list: 592

77.4% 67.5% 68.4% Maintain 59.0% 90.0%

DIABETES

*Diabetes DX Ever

*Documented A1c

Poor Glycemic Control >9.5

Ideal Glycemic Control <7

*BP Assessed

Controlled BP <130/80

LDL Assessed

Nephropathy Assessed

Retinopathy Exam

*Depression Assessed

*Influenza Vaccine

*Pneumovax Vaccine Ever

DENTAL

Dental Access General

Sealants

Topical Fluoride

*# Applications

Patients

IMMUNIZATIONS

Influenza 65+

Interoperability Features of RPMS that promote public centered care

- Master Patient Index (in development)
- Electronic Prescribing
- State Immunization Registries (bi-directional)
- Reference Lab Interface (bi-directional)
- Personal Health Record Portal (in development)
- Nationwide Health Information Network
- Regional Health Information Exchanges (HIE)

iCare

- A GUI interface to RPMS data that assists providers in the proactive identification and management of their patients (populations) that share similar, user-defined characteristics

IHS iCare - Demo panel - Panel View

File Patients Tools Window Help

Quick Patient Search:

Demo panel

Demonstration only

Definition

Patient List

Flags

GPRA

GPRA Aggregated

Information current as of: Oct 12, 2006

Total Patients = 4

Last updated Oct 18, 2006 04:54 PM

by (Unknown)

GPRA Glossary

Clinical Group	Measure Name	# Patients in Denominator	# Patients in Numerator	% Met	2006 Goal	IHS National 2005 Performance
DIABETES GROUP	LDL Assessed	0	0	0%	56.0%	53.0%
	Nephropathy Assessed	0	0	0%	50.0%	47.0%
	Retinopathy Exam	0	0	0%	BASEL...	50.0%
	*Depression Assessed	0	0	0%	N/A	N/A
	*Influenza Vaccine	0	0	0%	N/A	N/A
DENTAL GROUP	*Pneumovax Vaccine Ever	0	0	0%	N/A	N/A
	Dental Access General	4	0	0%	Maintain	24.0%
	Sealants	0	0	0%	Maintain	249,882
	Topical Fluoride	0	0	0%	N/A	113,324
	# Patients	0	0	0%	Maintain	85,318
IMMUNIZATIONS	Influenza 65+	0	0	0%	Maintain	59.0%
	Pneumovax Ever 65+	0	0	0%	72.0%	59.0%
	Childhood 19-35 mos	0	0	0%	N/A	N/A
	Active IMM Pkg Pts	0	0	0%	Maintain	75.0%
	Pap Smear Rates 21-64	2	1	50.0%	Maintain	60.0%
CANCER RELATED	Mammogram Rates 52-64	1	1	100.0%	Maintain	41.0%
	Colorectal Cancer 51-80	2	0	0%	Baseline	23.0%
	*Tobacco Assessment 5+	4	0	0%	N/A	34.0%
	*Tobacco Use Prevalence	0	0	0%	N/A	N/A
	Tobacco Cessation	1	0	0%	Baseline	N/A
BEHAVIORAL HEA...	FAS Prevention 15-44	1	0	0%	12.0%	11.0%

Selected Rows: 1

Visible Rows: 61

Total Rows: 61



iCare: Population Management Tool

- Provides an intuitive, integrated view into diverse patient data elements for populations as well as individuals
- Facilitates the proactive identification and management of populations as well as identified patients
- Supports easy creation and customization of panels of patients
- Nationally deployed in May 2007
- Active workgroup, change control board and Subject Matter Expert involvement

Key Features

- Flexible Patient Panels
- Tags
- Registers
- Search Templates
- Ad Hoc Fields
- Community Alerts
- Diagnostic Tags
- Care Management (HIV Management)
- Patient Record

Public Health: Community Alerts

- CDC Nationally Notifiable Diseases
 - Mandatory
 - Optional
 - Recommended
- Public Health Alerts
 - ILI
 - H1N1
- Suicidal Behavior
 - Ideation
 - Attempt
 - Completion

Community Alerts: First Login Display

iCare Community Alerts

Community Alerts from Aug 31, 2009 to Sep 30, 2009

COMMUNITY ALERTS

Community Alerts provide deidentified visit data related to high-profile diagnoses that occurred within the past 30 days and may affect other patients in your community. The Alert categories are:

1. CDC Nationally Notifiable Infectious Diseases (CDC NND)
2. Suicidal Behavior Related Incidents

Community	Type	Diagnosis	Number of Cases in the Past 30 Days	Number of Cases in the Past 24 Hours	Most Recent Occurrence
DOWNEAST	Suicidal Behavior	Ideation	1		Sep 28, 2009
LITTLE ROCK	Public Health	ILI	2		Sep 24, 2009
REDBY	Suicidal Behavior	Attempt	1		Sep 25, 2009

Community: Alerts

- Anonymous – linked to Community of Residence

RPMS iCare - GEBREMARIAM,CINDY - DEMO HOSPITAL

File Edit View Tools Window Help Quick Patient Search:

Panel List Flag List Community Alerts

New Open Delete Web Link View Detail

Community Alerts data current as of: Sep 29, 2009 08:15 PM
Community Alerts from Sep 01, 2009 to Sep 30, 2009

Community	Type	Diagnosis	Number of Cases in the Past 30 Days	Number of Cases in the Past 24 Hours	Most Recent Occurrence
DOWNEAST	Suicidal Behavior	Ideation	1		Sep 28, 2009
LITTLE ROCK	Public Health	ILI	2		Sep 24, 2009
REDBY	Suicidal Behavior	Attempt	1		Sep 25, 2009

Panel Name: assigned, assigned patients, Asthma, asthma test, Click to scroll

Community: Alerts

Community Alerts Patient View from Sep 01, 2009 to Sep 30, 2009

File Edit Tools Help

Create Panel Web Link

Patient Name HRN Sex Age DOB Designated PCP Community

BETA,BILLY
KAPPA,JEAN
LUSSIER,TOM
SMITH,ARLEN

RPMS iCare - Community Alerts Patient Detail - 9/30/2009 9:32:55 AM - Panel View

File Edit Patients Tools Window Help Quick Patient Search:

Community Alerts Patient Detail - 9/30/2009 9:32:55 AM **Total Patients = 4**

Selected patients panel created on 9/30/2009 by GEBREMARIAM,CINDY **Patient List Last Updated: Sep 30, 2009 10:32 AM by GEBREMARIAM,CINDY**

Properties

Patient List Flags Reminders Reminders Aggregated Natl Measures Natl Aggregated Diagnostic Tags Care Mgmt

Add Open Remove Copy Cut Paste Modify Share Layout

	Patient Name	HRN	Sex	Age	DOB	Designated PCP	Community
	BETA,BILLY ARTHUR	101298-DEMO	M	59 YRS	Jan 10, 1950		DOWNEAST
	KAPPA,JEAN MARIE	*111914-DEMO	F	28 YRS	Mar 02, 1981		REDBY
	LUSSIER,TOM KENDALL	110287-DEMO	M	16 YRS	Jan 04, 1993		LITTLE ROCK
	SMITH,ARLEN J SR	117273-DEMO	M	4 YRS	Sep 28, 2005	XLPROVIDER,RENAE FRANCES	LITTLE ROCK

Ready. Current Layout: System Default Selected Rows: 0 Visible Rows: 4 Total Rows: 4

Community: Alerts

- Customizable Display

RPMS iCare - User Preferences

Define My Patients Flag Setup Startup View Patient View **Comm Alert Setup**

NND Preferences

Category	Diagnosis	On/Off	Timeframe
MANDATORY	West Nile Virus	<input checked="" type="checkbox"/>	30 days
	Yellow Fever	<input checked="" type="checkbox"/>	30 days
RECOMMENDED	California Serogroup Virus Dis...	<input type="checkbox"/>	30 days
	Eastern Equine Encephalitis Vi...	<input type="checkbox"/>	30 days
	Giardia	<input checked="" type="checkbox"/>	30 days
	Hepatitis A	<input checked="" type="checkbox"/>	30 days
	Polio, nonparalytic	<input checked="" type="checkbox"/>	30 days
	Powassan Virus Disease	<input checked="" type="checkbox"/>	30 days
	Rubella, congenital	<input type="checkbox"/>	30 days

OK Cancel

Supporting Patient-Centric Health Care delivery

- Patient Wellness Handout
 - Integrated patient health record for patient use
 - IHS patient health summary includes
 - Patient health summary
 - Lab results (including reference labs)
 - Medication lists
 - Immunizations
 - Interpretation of the above

Patient Wellness Handout

Data extracted from
RPMS



Logic used to provide
information about
results



Reviewed with patient by
clinician, nurse, educator,
or pharmacist

***** Patient Wellness Handout ***** Jan 16, 2006 *****
PATIENT MEDICAL HANDOUT Report Date: Jan 16, 2006

FOREST GUMP HRN: 168711 Indian Health Medical Center
200 2ND STREET Cullen, Theresa
ADAIR, OKLAHOMA 74330 (888)123-4567
888-333-4444

Hello Mr. Gump,

Thank you for choosing Indian Health Medical Center.

This sheet is a new way for you and your doctor to look at your health.

Immunizations(shots). Getting shots protects you from some diseases and illnesses.

1 Immunization Due
INFLUENZA

Weight is a good measure of health - and it depends on how tall you are.
You are 5 feet and 7 inches tall.
Your last weight was 204 pounds on Sep 01, 2004.
You should have your weight rechecked at your next visit
Your Body Mass Index on Sep 01, 2004 was 32.0.
You are above a healthy weight. Too much weight can lead to lots of health problems - diabetes, heart disease, back pain, leg pains, and more. Ask your provider about things you can do to fix your weight.

Blood pressure is a good measure of health.
Your last blood pressure was 120 over 82 on Oct 07, 2005.
Your blood pressure is too high. Easy ways to make it better are eating healthy foods and walking or getting more physical activity.
If you take medicine to lower your blood pressure, be sure to take it every day.

Allergies, reactions that you've had to medicines or other things are very important. Below are the allergies that we know. If anything is wrong or missing, please let your provider know.

HX OF SULFA ALLERGY-RASH
HX OF ALLERGIES TO KEFLEX
HX OF FLU VACCINE ALLERGY

Here is a list of the medicines you are taking:

HYDROXYZINE 25MG TAB
Directions: TAKE 1 TABLET EVERY 4 HOURS IF NEEDED FOR ITCHING
TRIAMTERENE 50MG CAP
Directions: TAKE 1 CAPSULE DAILY

Where we need to be going

- Data transformed into information and knowledge
- Develop and enhance clinical information systems and data sharing processes that improve care
- Provide the ability to translate information into action (to benefit patients, insurance programs, population health programs and others)
- Facilitate Health Information Technology transition from medical model to integrated care model
- The patient, family and community become the center of health care decision making and power
 - Data availability to the patient and community is as important as the providers access

OIT- OUR VISION

- A Health IT system that goes beyond displaying hemoglobin A1C values
- Facilitate Health Information Technology transition from medical model to integrated care model
- The patient, family and community become the center of health care decision making and power
- Data availability to the patient and community is as important as the providers access
- A health care IT system that integrates population and community health as a cornerstone of health care delivery (not just an afterthought)
- Innovative solutions to simple and complex problems
- An 'enabler' for achieving equity in health status for American Indian/Alaska native people and communities